

HYBRID MICROELECTRONIC ARRAY STRUCTURE
HAVING ELECTRICALLY ISOLATED SUPPORTED ISLANDS,
AND ITS FABRICATION

ABSTRACT OF THE DISCLOSURE

5 A hybrid microelectronic array structure is fabricated from a readout
integrated circuit array of microelectronic integrated circuits and a supported array
of supported islands. The supported islands include one or more supported
elements, with a respective supported element for each of the readout integrated
circuits. The supported array is made by depositing the first semiconductor region
10 onto a supported substrate and depositing the second semiconductor region onto
the first semiconductor region, and defining supported islands as electrically
isolated segments. On each supported element, a first interconnect is formed to
the first semiconductor region and a second interconnect is formed to the second
semiconductor region. The supported array is joined to the readout integrated
15 circuit array by an interconnect structure, preferably a bump interconnect
structure, to form the hybrid microelectronic array structure, with each readout
integrated electrically interconnected to the respective one of the supported
elements.